# **Trigger Inhibits**

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#### **Overview**

- Trigger inhibits implemented using commercial modules
  - NIM and Camac logic in 1RR12D
- 16 primary inputs.
  - can be masked individually from RunControl
  - Controlled from VME-camac interface
    - Must include b0trin00 in a run to use inhibits
  - OR of the inputs sent to the Global Level 2 board in the Trigger Supervisor crate
  - Status on LED panel above Ace console

### Overview, 2

- Two classes of inputs:
  - Signals from the FIX MCS control system
    - Includes trips, but takes seconds(?) to reach inhibit
    - Can be masked separately from iFix
    - Inhibit if not OK for data-taking
  - Fast trip signals from power supplies
    - msec time scale
    - minimize chance of corrupt data
      - Most common source of inhibit

#### • Logic:

- $-TI_i = (iFix_i + Trip_i) * Mask_i$
- Some inputs direct from iFix, others use OR in NIM logic
- Special case: No iFix for CLC, so fast trip is latched
  - Must go to first floor to reset!

## iFix Inputs

- Specify status of particular components.
  - limited number of inhibit channels
  - divide separate functions within a system to separate MCS output channel
  - combine elements for one piece of experiment from various monitors
    - Example: CCAL includes
      - PMT HV
      - CES HV
      - CES LV
- Key idea:
  - Everything should be green on the inhibits iFix page

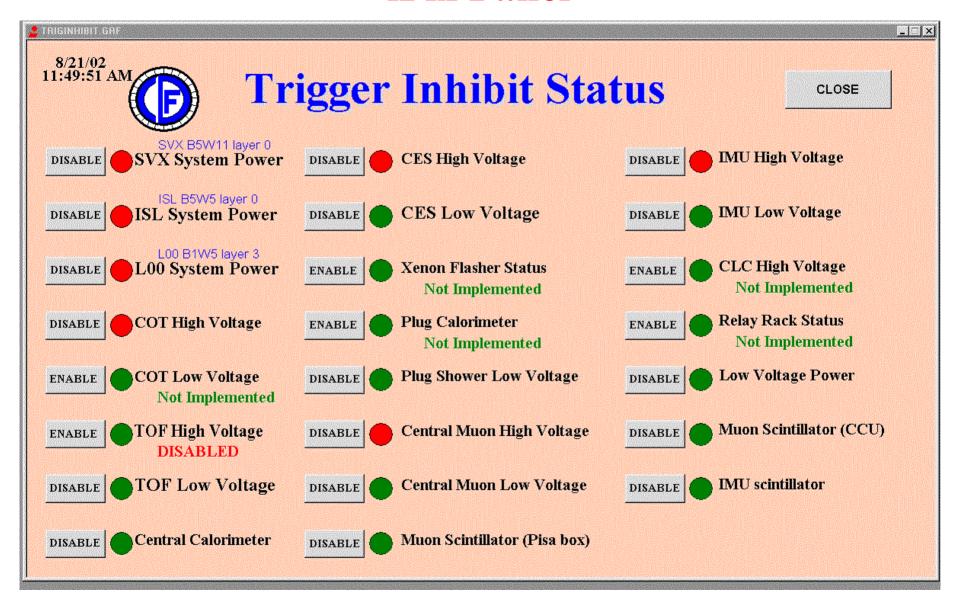
## Inhibit channel assignments

- 0 Solenoid
- 1 **SVX**
- 2 ISL
- 3 **COT**
- 4 TOF
- 5 Central Calorimeter
- 6 Plug Calorimeter
- 7 Central Muon (CMU, CMX, CMP)
- 8 **IMU**
- 9 CLC
- 10 L00
- 11 TeV Events
- 12 [unassigned]
- 13 Rack Protection
- 14 VME Power Supplies
- 15 [unassigned]

# **Summary of iFix Signals**

Channel	Tag	Computer
1	SVX_HV	svxiicon
2	ISL_HV	svxiicon
3	COT_HV	cot2
4	COT_LV	cot2
5	TOF_HV	tof1
6	TOF_LV	tof1
7	CENTRAL_HV	pisabox
8	CES_HV	muon3
9	CES_LV	voltman
10	XENON_OFF	pisabox
11	PLUG_HV	cdfephv
12	PES_LV	voltman
13	MUON_HV	muon3
14	MUON_LV	voltman
15	CSP_CSX	cdfccu
16	IMU_HV	muon3
17	IMU_LV	voltman
18	CLC_HV	clc
19	RACKS	cdf_s3
20	VME_POWER	voltman
21	CSP_CCU	cdfccu
22	IMU_CCU	cdfccu
23	L00_HV	svxiicon

#### iFix Panel



### **Response to Problems**

- Inhibit is a GIGO system
  - Detector experts responsible for inputs
    - If you get an inhibit, and you don't understand why: Call the detector experts!
    - If you have a problem and you didn't get an inhibit, but you think you should: Call the detector experts!
    - If they think they are sending the correct info but the inhibit is behaving badly, call me.
  - Most common problems
    - LEDs are flaky
      - New system won't have LEDs
    - Spurious inhibit events in Run Control
      - New system won't have camac
    - Somebody resets camac module address
      - Instructions for fix on web